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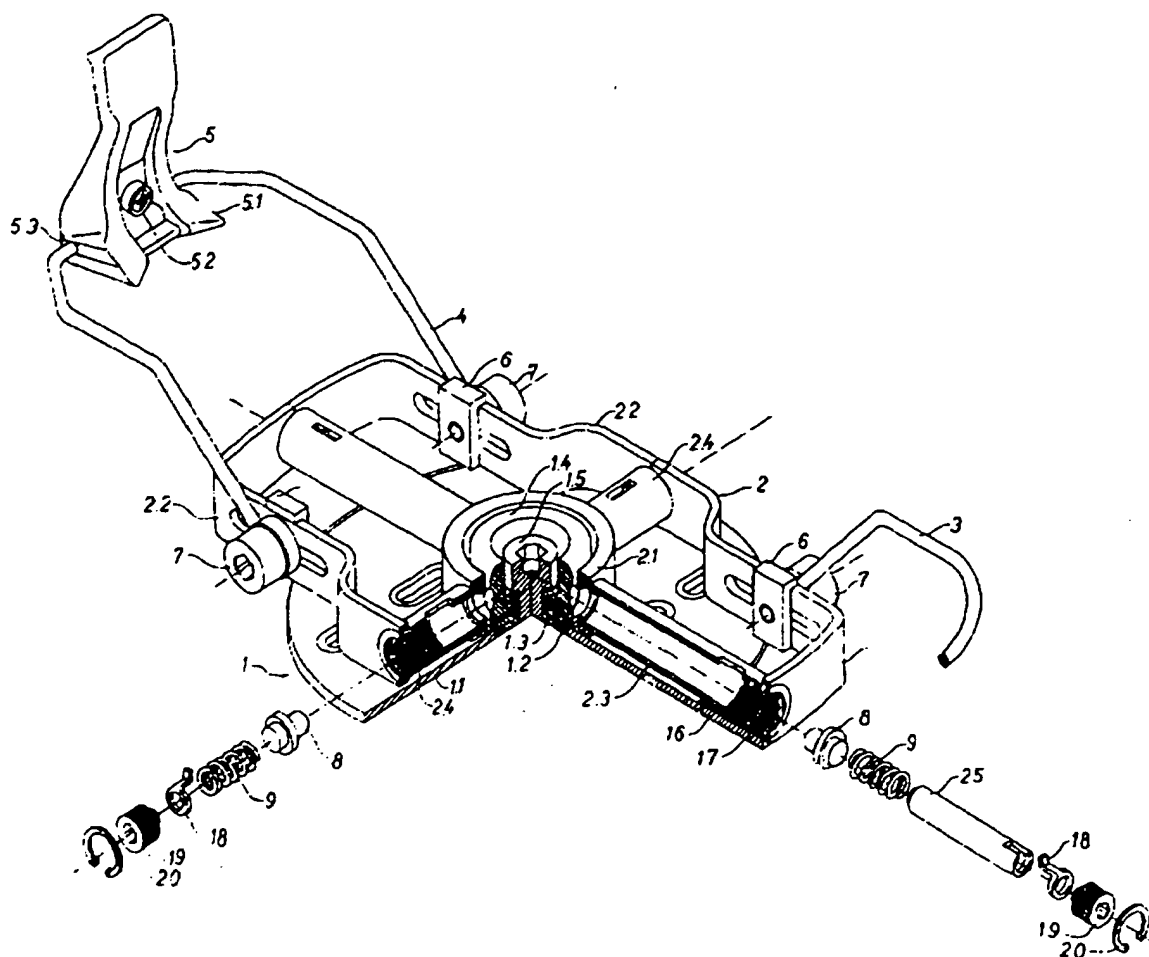
(72) DINKO, Starcevic, CA

(71) DINKO, Starcevic, CA

(51) Int.Cl.⁶ A63C 9/00

(54) **ATTACHE DE PLANCHE A NEIGE AVEC MECANISME DE
LIBERATION**

(54) **SNOWBOARD BINDING WITH RELEASE MECHANISM**



(57) Attache de planche à neige avec mécanisme de libération comprenant un complexe supérieur (2) sur lequel une fixation de botte (3) et une fixation de racine avant (4) sont assujetties au crochet (5) au moyen de vis (7) et d'écrous (6) qui permettent en même temps le réglage. Sur l'anneau central (2.1), des éléments tubulaires (2.3) et (2.4) sont soudés et disposés à

(57) Releasable snowboard binding which includes upper complex (2) where the rear boot holder (3) and front boot holder (4) are fastened with screws (7) and nuts (6) to the buckle (5), allowing a adjustment at the same time. On the central ring (2.1) tubular elements (2.3) and (2.4) are welded and set at 90 degrees distance, all encircled with four identical elements (2.2) and welded together. Each





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90 degrés l'un de l'autre, encerclés par quatre éléments identiques (2.2) et soudés ensemble. Chaque élément tubulaire comprend un boulon à pression (8) poussé par un ressort (9) puis un affichage de tension (18) et une vis de tension (19). Les éléments tubulaires (2.3) comportent une pièce additionnelle d'espacement (25) entre le ressort (9) et l'affichage de tension (18). Tous les boulons à pression (8) s'ajustent avec précision dans les logements de l'anneau supérieur (1.4) du complexe inférieur (1), disposés à 90 degrés l'un de l'autre. L'anneau supérieur (1.4) est serré par une vis (1.5) contre l'anneau inférieur (1.2) et un anneau à friction (1.3) entre les deux. L'anneau inférieur (1.2) est soudé à une plaque de fixation (1.1) assujettie à la planche à neige au moyen de vis.

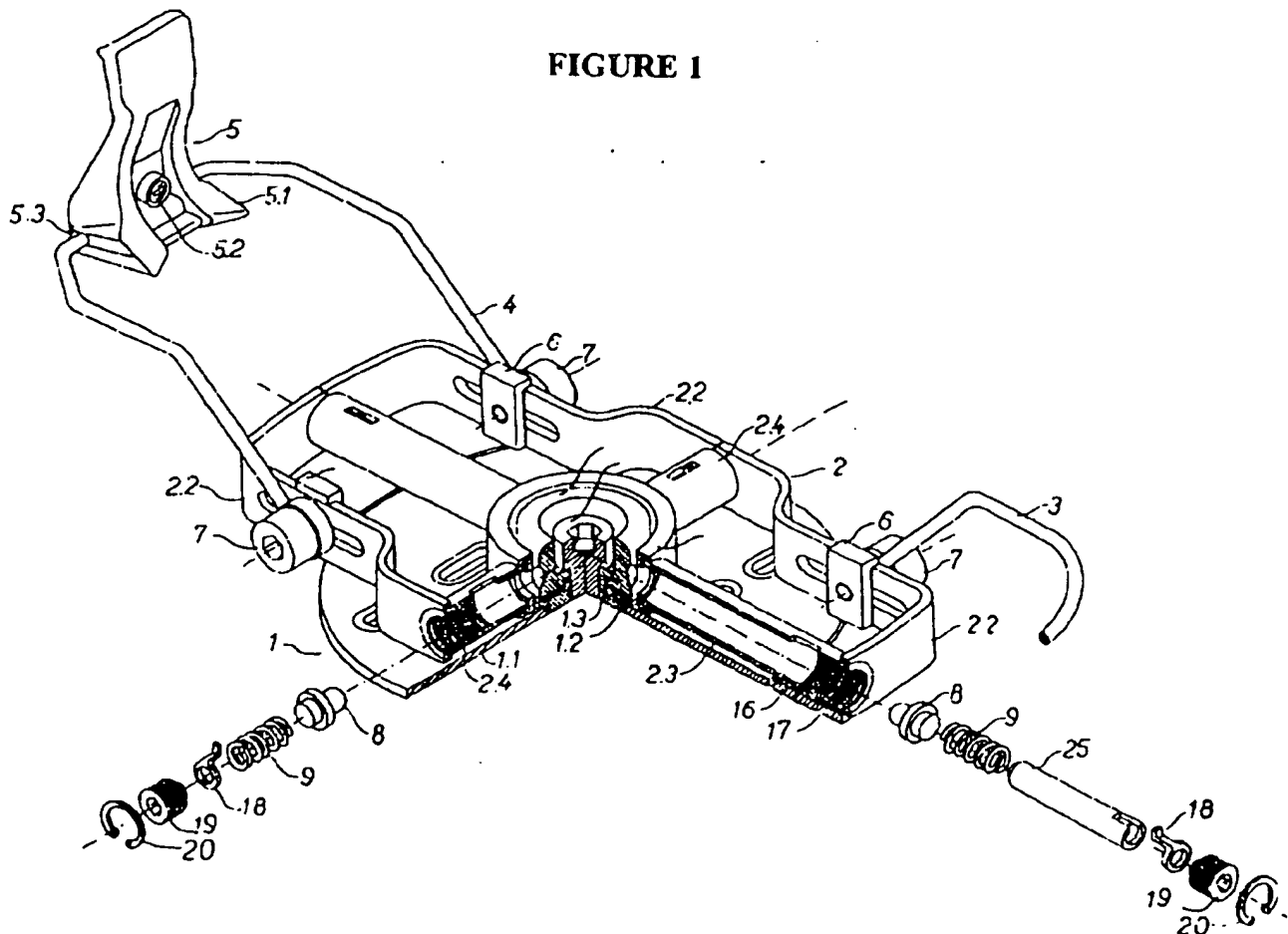
tubular element includes pressing bolt (8) pushed by spring (9) then tense display (18) and tense screw (19). Tubular elements (2.3) include additional distance part (25) between spring (9) and tense display (18). All pressing bolts (8) fit precisely into recesses in the upper ring (1.4) of lower complex (1), set at 90 degrees distance. The upper ring (1.4) is tightened with screw (1.5) to the lower ring (1.2) to friction ring (1.3) in-between them. The lower ring (1.2) is welded to attaching plate (1.1), fastened by screws to the snowboard.



ABSTRACT

Releasable snowboard binding which includes upper complex (2) where the rear boot holder (3) and front boot holder (4) are fastened with screws (7) and nuts (6) to the buckle (5), allowing adjustment at the same time. On the central ring (2.1) tubular elements (2.3) and (2.4) are welded and set at 90 degrees distance, all encircled with four identical elements (2.2) and welded together. Each tubular element includes pressing bolt (8) pushed by spring (9) then tense display (18) and tense screw (19). Tubular elements (2.3) include additional distance part (25) between spring (9) and tense display (18). All pressing bolts (8) fit precisely into recesses in the upper ring (1.4) of lower complex (1), set at 90 degrees distance. The upper ring (1.4) is tightened with screw (1.5) to the lower ring (1.2) to friction ring (1.3) in-between them. The lower ring (1.2) is welded to attaching plate (1.1), fastened by screws to the snowboard.

FIGURE 1



Legalized translation from Croatian

Dinko Starčević
S. V. Čiče 8
T. 51000 Rijeka
U. Croatia

SNOWBOARD BINDING WITH RELEASE MECHANISM

INVENTION DESCRIPTION

1) TECHNICAL AREA CORRESPONDING TO THE INVENTION

This invention relates to ski bindings as wide area in consideration of snowboard bindings as a very specific technical field. According to the International Patent Classification it is classified as:

2) TECHNICAL DEMAND

Being engaged in sport called snowboarding there still exists essential risk: how to protect efficiently legs from serious injuries or fractures. Directly to that problem we are also faced with the possibility of an undesirable effect: releasing of the binding at harder board carving or harder board slamming to the slope, avoiding snowboarder's fall.

3) STATE OF THE PRIOR ART

All known solutions are mainly based on principle of fixed connection between the snowboarder and snowboard, which means that when the snowboarder falls down, he will not be separated from the board. Bindings are divided into two known categories: soft and hard type, where only the hard ones have couple models with insufficient ability of releasing at the moment of fall. So, all circumstances are reduced to fixed bindings use, which have no release characteristics, meaning that there is great risk for snowboarders to hurt their legs.

4) INVENTION ESSENCE EXPLICATION

Primarily, the goal of this invention is to enable safe binding to snowboarders, allowing maximum protection and reduction to the minimum of risk factors.

The second aim is to put in use longer snowboards, which has been almost impossible so far, due to fixed attachment to the board, and extremely high risk of accidents.

The next aim is to endure such binding which will be able to release the foot only in critical moment of overloading or fall, but at the same time to achieve compact and solid attachment to the board.

Further aims and advantages of this invention will be partly reviewed in the following description and partly through invention use. Releasable snowboard binding includes two main complexes of elements: lower complex attached with screws to the board, which intrudes with its ring-shaped parts into the upper complex, achieving mechanical connection with the same, then the upper complex having the boot attached over its top, encircling partly the lower complex. Elements of the upper complex as well as the lower one are fastened together by welding joints where maximum stiffness is achieved, then screw joints which allow several regulations and adjustments. The essence of the invention is mechanical joint which disconnects, releases, at overloaded force and establishes again by simple pressing the upper complex over the top of the ring-shaped parts of the lower complex.

5) DRAWINGS DESCRIPTION

The following drawings, being the part of invention description, illustrate in the best way so far the invention performance and are very helpful for explanation of basic invention principles.

- Figure 1 Spatial perspective of releasable snowboard binding in state of complete assembly with cut of one symmetric quarter for better layout of smaller elements
- Figure 2 Spatial perspective of supporting part of upper complex (2) with its elements which are welded together.
- Figure 3 Spatial perspective of lower complex (1) with its composing elements, where (1.1) and (1.2) are welded together and attached with screw joint to other parts
- Figure 4 Spatial perspective of front boot holder
- Figure 5 Spatial perspective of rear boot holder
- Figure 6 Spatial perspective of holder of rubber support
- Figure 7 Spatial perspective of rubber support
- Figure 8 Spatial perspective of screw for boot holders
- Figure 9 Spatial perspective of nut for boot holders attachment
- Figure 10 Spatial perspective of all elements of upper complex in order of installing in tubular elements (2.3) and (2.4)
- Figure 11 Spatial perspective of buckle of front boot holder

6) DETAILED DESCRIPTION OF AT LEAST ONE MANNER OF INVENTION PERFORMANCES

Introduction into detailed performance of this invention is presented here below, along with an example illustrated on attached drawings.

Referring to Fig. 1 it can be seen that releasable snowboard binding includes two main complexes, 1 and 2, which have all other functionally indispensable elements attached. Lower complex 1, includes attaching plate 1.1 with screw

holes and lower ring 1.2 welded to the plate. Friction ring 1.3 and upper ring 1.4 with four concave recesses set at 90 degrees distance in the horizontal plane, all fastened together with screw 1.5 to the lower ring, all shown on the Fig. 3. Upper complex 2, visible on Fig. 2, encircles its central ring 2.1 the lower complex, is made from two tubular elements 2.3, two tubular elements 2.4 and the frame from four identical elements 2.2. All tubular elements are set at 90 degrees distance in horizontal plane, precisely opposite to concave recesses in the element 1.4 of lower complex. Tubular elements contain inside all indispensable parts to achieve direct mechanical connection of upper and lower complex, beginning with pressing bolt 8, which precisely fits into the recess in element 1.4, then spring 9, tense display 18 and tense screw, all visible on Fig. 10. In two longer tubular elements 2.3 distant part 25 is placed in-between the spring and tense display. In all tubular elements 2.3 and 2.4 there is safety ring 20 placed in its groove, just at the outer ends. Rear boot holder 3 is placed on the upper complex 2, as well as the front boot holder 4 with the buckle 5, all fastened together with screws 7 and nuts 6 in the element regulation slots 2.2. The whole upper complex is leaning with its ends on two rubber supports 17, which are fastened to their holders 16. As shown on Fig. 1, 2, 3 and 5, this invention offers technical feasibility making it possible that snowboarder's boot, attached to the upper complex, can be released from the lower complex attached to the board. Boot sole is leaning onto supporting part 2, being restraint in-between the rear boot holder 3 and the buckle 5 on front boot holder. Required length is set up, as shown on Fig. 1, with screws 6 and nuts 7, pushing along slots. Mechanical connection between upper and lower complex is achieved by elements shown on fig. 10, placed in tubular elements 2.3 and 2.4 put in the same order, where tightening or loosening of the tense screw 19 is increasing or decreasing releasing force respectively. If connection is displaced in the of fall, or detaching the two complexes, then with very simple vertical pressing of complex 2 over the upper ring 1.4, connection is restituted by dropping pressing bolts into their recesses on the upper ring. As shown on Fig. 3, friction ring is placed under the ring 1.4 and tightened with screw 1.5 and achieves solid joint, but at the same time with loosening the crew it allows horizontal twist adjustment in any desirable position.

For production of binding hard plastic is recommended for buckle 5 and distance part 25, hard rubber for rubber support 17 and friction ring 1.3, and inox steel for all the other parts. The length of binding or supporting complex 2 should not exceed 200 mm, while the thickness should be 20 mm.

12) MODE OF INVENTION APPLYING

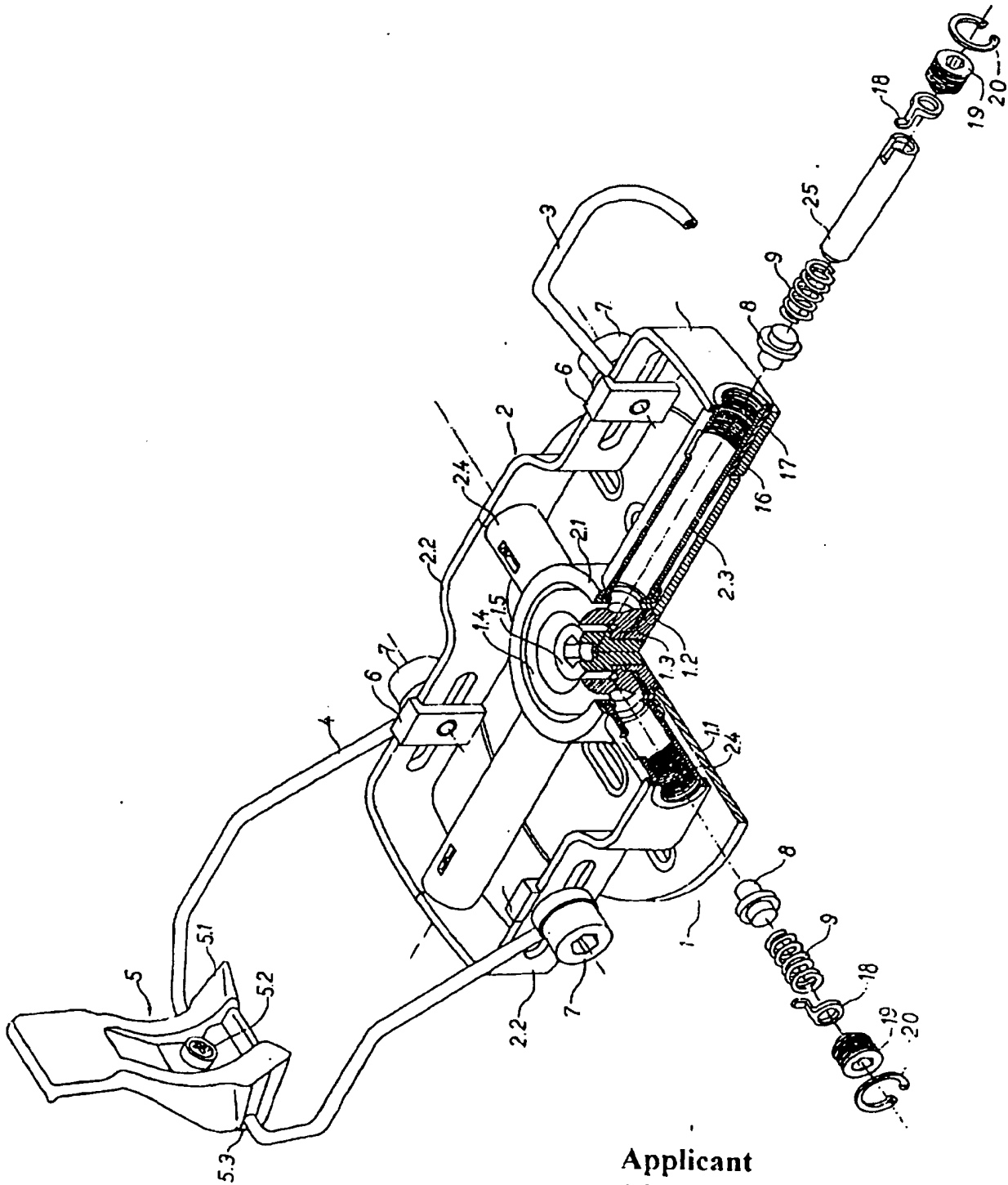
This invention provides maximum snowboarding safety and opens new potentials even in snowboard production: because of safety reasons a most common length of snowboard is 1.4 m to 1.5 m, but never more than 1.7 m. Now these limits may be moved towards bigger lengths which allow smoother and more stable ride, very alike skiing.

Likewise it is possible to attach soft snowboard binding over the top, and reunion advantages of soft binding with maximum safety.

PATENT CLAIMS

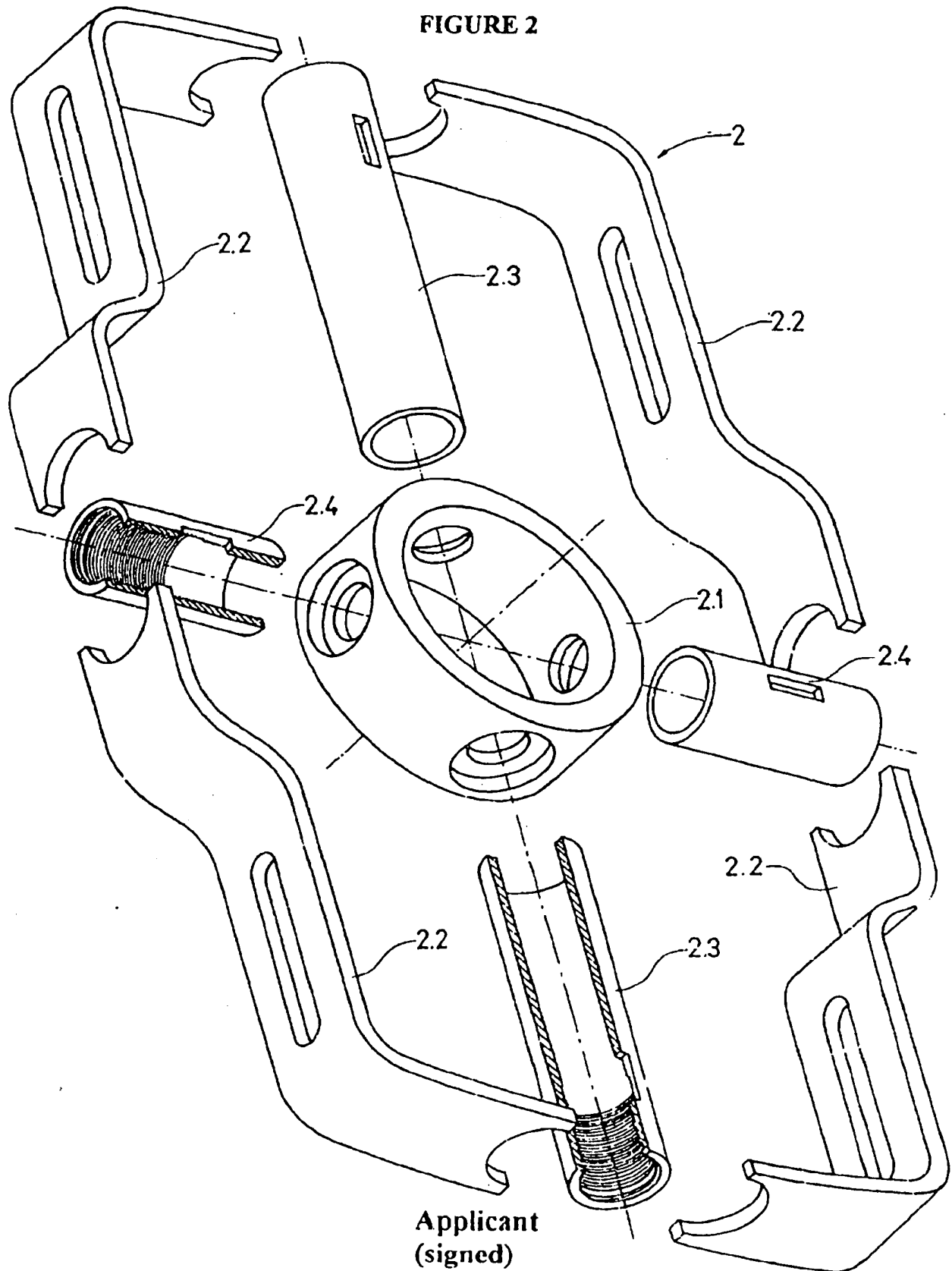
1. Releasable snowboard binding, consisting of rear boot holder (3), front boot holder (4) with buckle (5) is designed so that boot holders are fastened with screws (7) and nuts (6) to supporting part of upper complex (2) where it can move longitudinally inside slots on outer frame (2.2).
2. Releasable snowboard binding from the point 1 hereof is designed so that stated supporting complex (2) includes two shorter tubular members (2.4), and two longer tubular members (2.3) placed on the central ring (2.1) with 90 degrees distance between them, all framed with four identical frame elements (2.2).
3. Releasable snowboard binding from the point 2 hereof is designed so that each tubular member (2.4) includes pressing bolt (8) pushed by spring (9), having tense display (18) and tense screw (19) all limited by safety ring (20).
4. Releasable snowboard binding from the point 2 and 3 hereof is designed so that each tubular member (2.3) includes additional distance part (25) placed in-between spring (9) and tense display (18).
5. Releasable snowboard binding from the point 2 hereof is designed so that its central ring (2.1) surrounds the upper ring (1.4) which has four concave recesses, placed at 90 degrees distance in horizontal plane, where fitting precisely the bowl head of pressing bolt (8).
6. Releasable snowboard binding from the point 5 hereof is designed so that under the upper ring (1.4) of complex (1) friction ring (1.3) is placed, leaning against the surface of lower ring (1.2), welded with its other surface to attaching plate (1.1).
7. Releasable snowboard binding from the point 6 hereof is designed so that all members of complex (1) are fastened with screw (1.5) into compact unit.

FIGURE 1



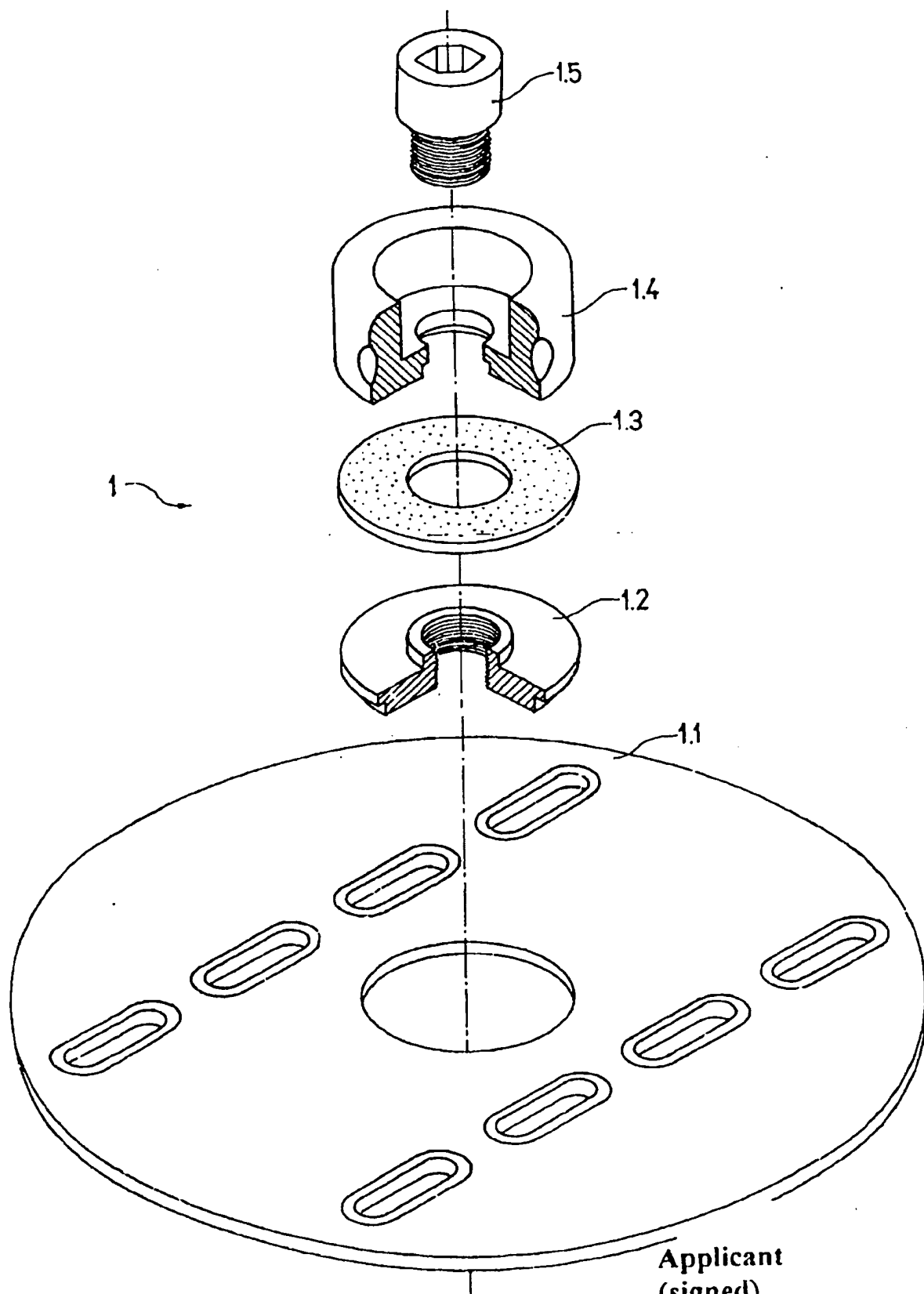
Applicant
 (signed)
 Dinko Starčević

Dinko Starčević

**SNOWBOARD BINDING WITH
RELEASE MECHANISM****FIGURE 2**

Applicant
(signed)
Dinko Starčević

FIGURE 3



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(signed)
Dinko Starčević

FIGURE 4

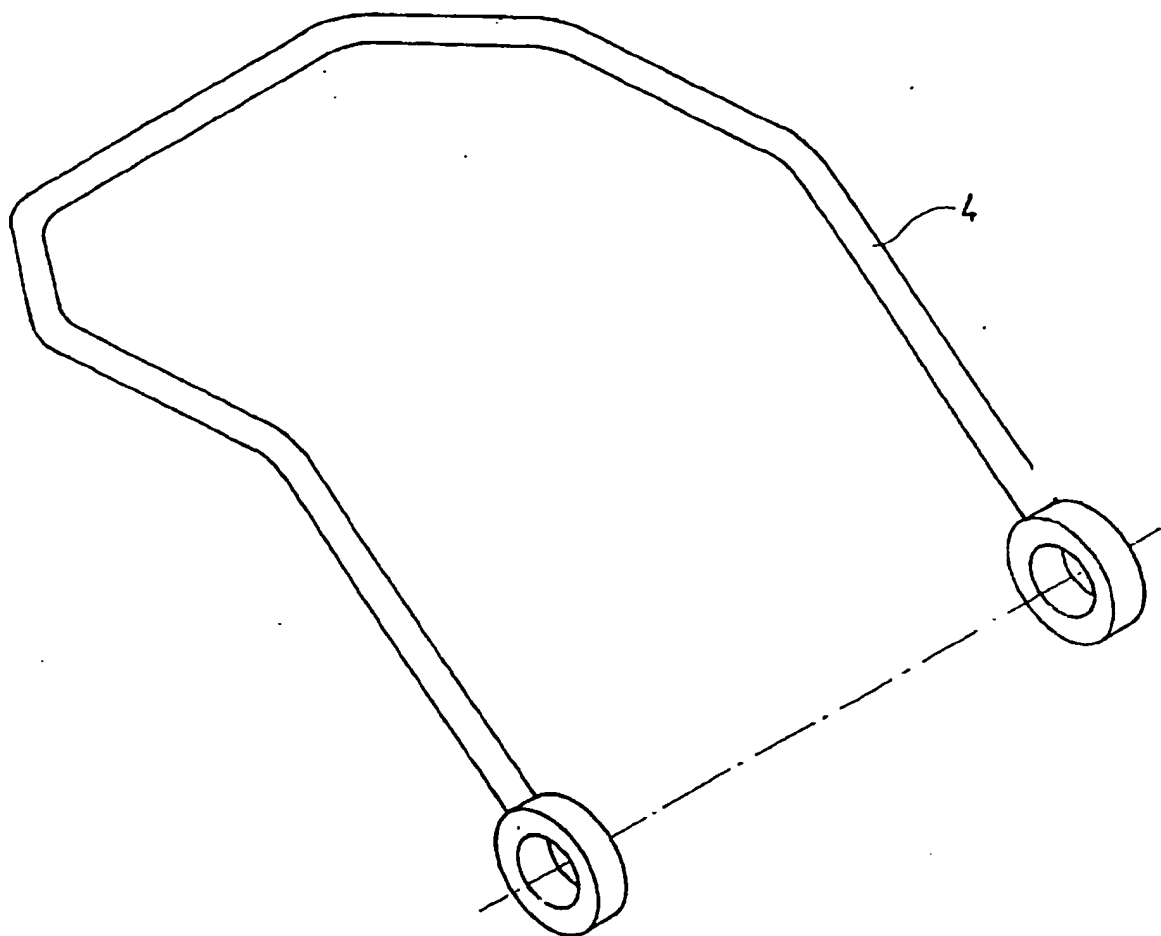
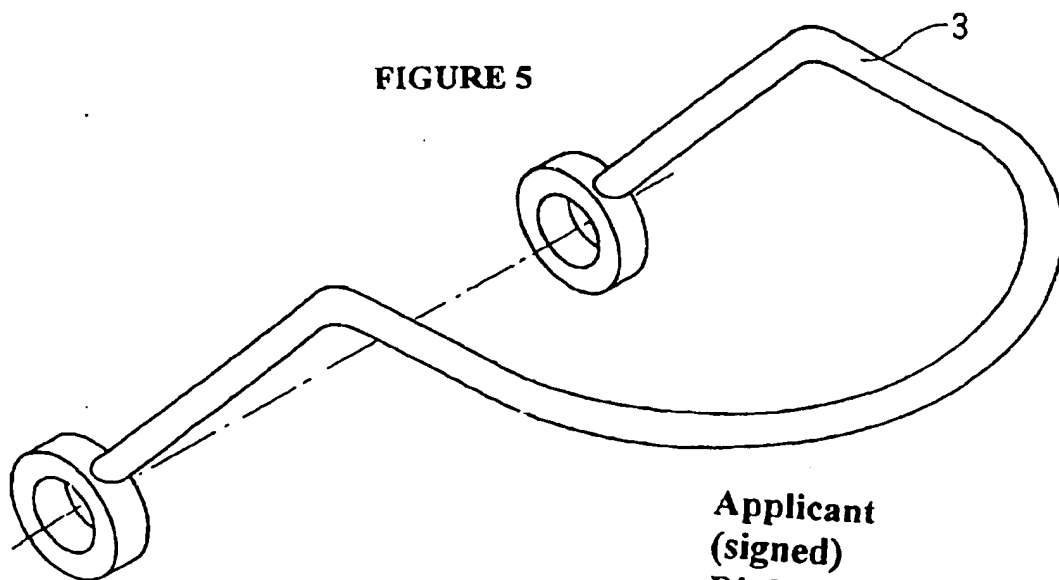


FIGURE 5



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FIGURE 6

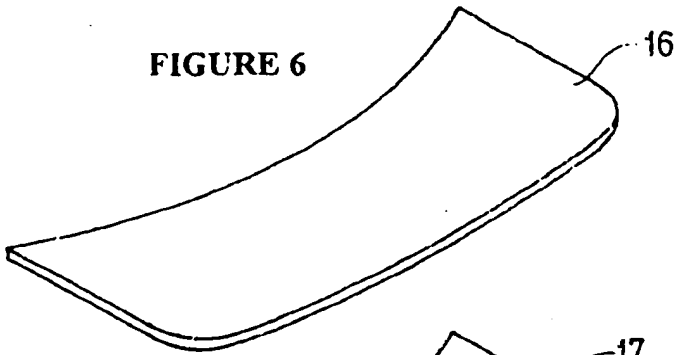


FIGURE 7

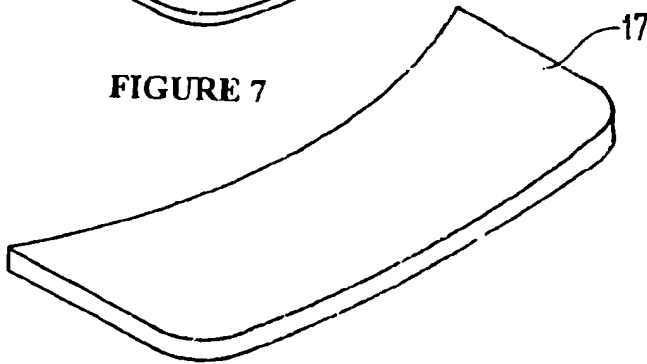


FIGURE 8

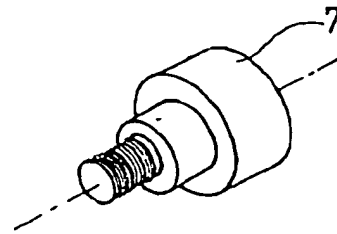


FIGURE 9

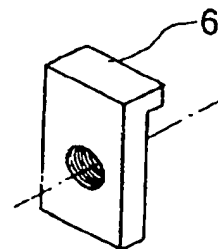


FIGURE 10

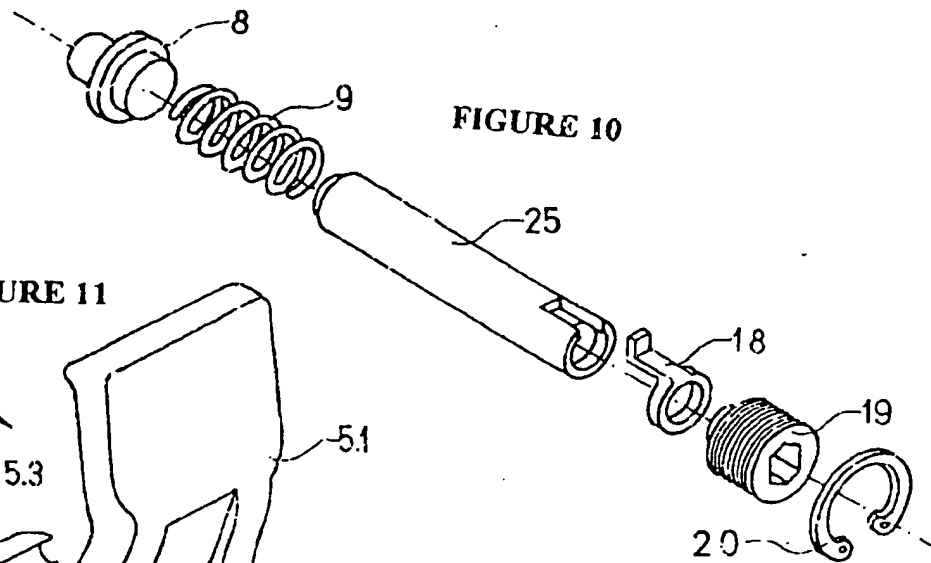
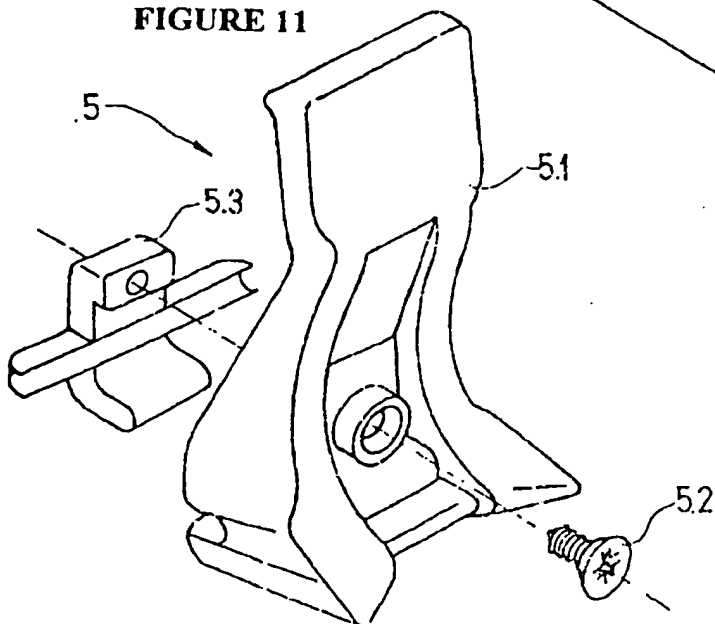


FIGURE 11



Applicant
 (signed)
 Dinko Starčević